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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
WESSENDORF, TERESA D	

ART UNIT	PAPER NUMBER
1639	

DATE MAILED: 10/19/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/284,107	LOGTENBERG ET AL.	
	Examiner	Art Unit	
	T. D. Wessendorf	1639	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *28 July 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *21-31 and 33-37* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *21-31 and 33-37* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

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DETAILED ACTION

Claims 21-31 and 33-37 are pending and under examination.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 112

Claims 21-31 and 33-37, as amended, are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention for reasons of record.

A. New Matter rejection:

Response to Arguments

Applicants argue that MPEP 2163(I)(B) states that no haec verba requirement is required in the disclosure for the specific term "non-linear". It is argued that the specification discloses other non-linear conformation such as disulfide bridged circular bridge or having peptides that contain more than one disulfide bridge. See, e.g., the specification at page 7, lines 4-10. A person of skill in the art would recognize that a description of

a peptide as "linear or compris[ing] another conformation" is a description of a peptide that is linear or non-linear. As an alternative way of stating another conformation other than linear is simply to say non-linear.

In reply, a statement that a conformation is non-linear as an alternative term to a linear weighs more than simply an alternativeness. As well known in the art non-linear encompasses a huge scope of conformation. It ranges from the argued single disulfide bridge to the numerous ways by which a peptide can be cyclized, for example, to form a non-linear conformation. The cyclic conformation can be an end-to-end, side-to-side, end-to-side and so forth. Thus, the single disclosed disulfide bridge as a non-linear conformation as of filing, is not a support for the innumerable non-linear conformation of a linear compound.

New Matter Rejection for the newly amended claim 21:

In claim 21 the step (f) of "propagating the isolated packages..." is not supported in the as-filed specification. Applicants point out support at e.g., page 9, lines 12-14 and page 10, lines 5-15. However, the propagating step of the phage does not support the claimed propagating the broad isolated packages. The step of propagating does not seem to fit in with the claimed steps. The specification recites "..removal of the non-bound phages by washing, bound phages are selected from the

rods and propagated in bacterial cells". The claim recites "isolating the packages specific for individual oligopeptides and propagating the isolated packages…" (Emphasis added) This is a different concept as the cited section in the specification. [See further the rejection under 112, second paragraph below.]

B). Written Description:

Response to Arguments

It is argued that the specification describes the genus of antibodies and antigen binding fragments thereof that convey to a skilled artisan that applicants were in possession of the invention at the time of filing. Applicants argue that the specification expressly discloses the use of antibody display libraries using methods known in the art, e.g., at page 12, line 1 to page 13, line 9. Applicants further state that a working example of a library of synthetic antibodies was constructed as disclosed at page 15, lines 1-15.

In response, that the working examples disclose the synthetic library of "rearranged" VH genes produced by incorporating the degenerate oligonucleotides of the CDR3 to a VH germline genes is not controverted. What is at issue is the huge scope of antibodies or its antigen binding fragments, inter alia. Other than the single VH gene antibody fragments, the specification is replete with generalities as to the huge scope

of a library of antibody and its antigen binding fragments. The disclosure does not provide any correlation of the single VH gene library to any genus library of e.g., a full-length antibody or antigen binding fragments. It is not apparent how the single rearranged genes can be applied to produce other synthetic library of any full-length antibody gene library or antigen-binding fragment. The Office does not require that applicants provide sequences for the antibodies and fragments thereof. Rather, as stated in University of California v. Eli Lilly and Col, 43 USPQ 2d 1398, 1405(1997), quoting Fiers V. Revel, 25 USPQ 2d 1601m 16106 (Fed. Cir. 1993), that the written description of an invention involving a chemical genus, like a description of a chemical species, requires a precise definition, such as by structure, formula [or] chemical name of the claimed genus sufficient to distinguish it from other materials. There is no description of the genus directed to a library of antibody or antigen binding fragment. The construction of a library is only one of the numerous undefined variables of the huge scope of he claimed genus. There is yet the target ***subregion*** to which the polypeptide is capable of specific binding. The kind, number or length of a set of overlapping or non-overlapping oligopeptides that can be derived from any type of target protein and the other undefined

variables of the genus used in the method. Adequate disclosure requires representative examples, which provide reasonable assurance to one skilled in the art that the compounds falling within the scope both possess the alleged utility and additionally demonstrate that applicant had possession of the full scope of the claimed invention. See In re Riat (CCPA 1964) 327 F2d 685, 140 USPQ 471; In re Barr. (CCPA 1971) 444 F 2d 349, 151 USPQ 724 (for enablement) and University of California v. Eli Lilly and Co.. The more unpredictable the art the greater the showing required (e.g. by representative examples). [It is of interest to note the specification at page 6. It describes an unpredictable conformation and the disulfide bridge.]

C). ***Enablement:***

Claims 21-31 and 33-37, as amended, are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention for reasons advanced in the last Office action.

Response to Arguments

Applicants argue that the claimed methods do not require pre-existing knowledge of either the region of the target

antigen and identification of appropriate antibodies for use in the claimed assay. Applicants state that using a set of oligopeptides from any region of the antigen, the method permits the identification of an antibody that specifically binds that region. Using any type of library of antibody, the method permits rapid and specific identification of one or more antibodies that bind a particular sequence. Because libraries of oligopeptides and antibodies can be used simultaneously the methods avoid the arduous selection process required for hybridoma creation and characterization and eliminate the selection limits associated with immunodominant or antigenic epitopes while expanding the range of novel antibodies available for selection in rapid and specific manner. In other words, the claimed methods provide a predictable and readily achievable method to identify antibodies that bind a particular region of an antigen. Applicants further state that the expression systems in a replicable display packages are well known and readily employed using the guidance and working example in the specification.

In response, a library, like hybridoma, can create an arduous selection process because of the huge diverse members, problems can arise that even the desired member may not be adequately express by the host. One of the difficult or

challenging tasks in library determination is not the creation of a library. Rather, how the library can be analyzed or assay to obtain the desired e.g., specific binding with an antigen. It is well known in the art that the individual member in a library, even the desired member, may not be expressed by a host to enable its identification. Thus, It is not clear how ***specific*** binding between two undefined components can be made without any knowledge of each of the components present therein. The method appears to be looking for a needle in a haystack. The enabling disclosure in the specification does not teach how to make a generic library that binds to a generic antigen. The working example is drawn to a single antibody library that binds to a specific antigen. Furthermore, the replicable display packages recited in the working example is drawn to phage and not any other replicable display packages as claimed.

Applicants required clarification of page 10, section 6 of the last Office action. Applicants state that the claimed method is not directed to the use of an ELISA, but rather to a selection method.

In reply, the disclosure describes an ELISA assay method. It is apparent that appropriate selection can only be discerned by an assay. ELISA was exemplified to demonstrate one of the unpredictable factors of the method. For even with the single

assay method, applicants encountered unpredictable effect i.e., background noise that can prevent an accurate detection of e.g., binding effect. If applicants already encountered such unpredictable factors or problems for a single variable, how much more for a skilled artisan given no guidance or direction in the specification for the generic claimed method?

Claim Rejections - 35 USC § 112, second paragraph

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 21-31 and 33-37, as amended, are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 21 the step of "propagating the isolated packages…" is unclear as to the step encompassed by propagating the isolated packages. The preceding steps appear to have propagated already the packages and isolated therewith the desired packages and need only determine for its binding effect. Furthermore, it is unclear how by simply propagating the isolated packages a nucleotide sequence of the polypeptide capable of binding to the specific oligopeptide of the target

protein is obtained. Applicants may be their own lexicographer, however, they cannot go against what is commonly used in the art or in the specification. The patentee is permitted to be his own lexicographer carries with it the connotation that he will use terms consistently throughout his patent. Porter v. Farmers Supply Services Inc., 228 USPQ 4. The terms used in the claims are to be interpreted in light of the specification and the specification does not provide for said term and concept of propagation.

Claim Rejections - 35 USC § 103

Claims 21-31 and 33-37, as amended, are rejected under 35 U.S.C. 103(a) as being unpatentable Burnie for reasons set forth in the last Office action.

Response to Arguments

Applicants submit that Burnie fails to disclose the contacting of a library of antibodies with a library of oligopeptides from an antigen to identify one or more specific antibodies, i.e., step ©.

In response, applicants' arguments, with respect to step (c) is not commensurate in scope with the claims. Step c recites a set of oligopeptides which set is similarly recited by Burnie. Hence, the method of Burnie renders the claimed prima facie obvious.

Conclusion

Applicants did not address the Brodin et al reference. Accordingly, it is believed that applicants recognized the relevance of said reference.

No claim is allowed.

Applicants' amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to T. D. Wessendorf whose telephone number is(571) 272-0812. The examiner can normally be reached on Flexitime.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew Wang can be reached on (571) 272-0811. The fax phone number for the organization where this application or proceeding is assigned is 571 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

T. D. Wessendorf
Primary Examiner
Art Unit 1639

Tdw
October 15, 2005